OIPE

	Changed a lile from non-ASCII to ASCII ENTERED Verified by: (STICE
	Changed the margins in cases where the sequence text was "wrapped" down to the next line.
	Edited a format error in the Current Application Data section, specifically:
1	Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other
	Added the mandatory heading and subheadings for "Current Application Data".
	Edited the 'Number of Sequences' field. The applicant spelled out a number instead of using an integer
	Changed the spelling of a mandatory field (the headings or subheadings), specifically:
	Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
	Inserted or corrected a nucleic number at the end of a nucleic line. SEO ID NO's edited:
	Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
	Inserted colons after headings/subheadings. Headings edited included:
_	Deleted extra, invalid, headings used by an applicant, specifically:
	Deletod: non-ASCII garbago at the beginning/end of files: secretary initials/filename at end of file page numbers throughout text; other invalid text, such as
	Inserted mandatory headings, specifically:
(Corrected an obvious error in the response, specifically:
-	Edited identifiers where upper case is used but lower caso is required, or vice versa.
C	Corrected an error in the Number of Sequences field, specifically:
^	Hard Pago Break gode was inserted by the applicant. All occurrences had to be deleted.
	loted ending stop codon in amino acid sequences and adjusted the *(A)Length:* field accordingly (error to a Patentin bug). Sequences corrected:
	ther:
-	

Examiner: The above corrections must be communicated to Action. DO NOT send a copy of this form. 2/1/95



PATENT APPLICATION: US/09/816,790

DATE: 10/09/2001 TIME: 14:33:28

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\I816790.raw

4 <110> APPLICANT: Allen, Keith D. Phillips, Russell 7 <120> TITLE OF INVENTION: TRANSGENIC MICE CONTAINING SULFOTRANSFERASE GENE DISRUPTIONS 10 <130> FILE REFERENCE: R-855 12 <140> CURRENT APPLICATION NUMBER: US 09/816,790 13 <141> CURRENT FILING DATE: 2001-03-22 15 <150> PRIOR APPLICATION NUMBER: US 60/191,240 16 <151> PRIOR FILING DATE: 2000-03-22 18 <150> PRIOR APPLICATION NUMBER: US 60/204,230 19 <151> PRIOR FILING DATE: 2000-05-15 21 <150> PRIOR APPLICATION NUMBER: US 60/223,173 22 <151> PRIOR FILING DATE: 2000-08-07 24 <160> NUMBER OF SEQ ID NOS: 21 26 <170> SOFTWARE: FastSEQ for Windows Version 4.0 28 <210> SEQ ID NO: 1 29 <211> LENGTH: 4768 30 <212> TYPE: DNA 31 <213> ORGANISM: Artificial Sequence 33 <220> FEATURE: 34 <223> OTHER INFORMATION: Phage vector 36 <400> SEOUENCE: 1 37 gttaactacg tcaggtggca cttttcgggg aaatgtgcgc ggaaccccta tttgtttatt 60 38 tttctaaata cattcaaata tgtatccgct catgagacaa taaccctgat aaatgcttca 120 39 ataatattga aaaaggaaga gtatgagtat tcaacatttc cgtgtcgccc ttattccctt 180 40 ttttgcggca ttttgccttc ctgtttttgc tcacccagaa acgctggtga aagtaaaaga 240 41 tgctgaagat cagttgggtg cacgagtggg ttacatcgaa ctggatctca acagcggtaa 300 42 gateettgag agttttegee eegaagaaeg tteteeaatg atgageaett ttaaagttet 360 43 getatgtgge geggtattat eeegtgttga egeegggeaa gageaacteg gtegeegeat 420 44 acactattct cagaatgact tggttgagta ctcaccagtc acagaaaagc atcttacgga 480 45 tggcatgaca gtaagagaat tatgcagtgc tgccataacc atgagtgata acactgcggc 540 46 caacttactt ctgacaacga tcggaggacc gaaggagcta accgcttttt tgcacaacat 600 47 gggggatcat gtaactcgcc ttgatcgttg ggaaccggag ctgaatgaag ccataccaaa 660 48 cgacgagcgt gacaccacga tgcctgtagc aatggcaaca acgttgcgca aactattaac 720 49 tggcgaacta cttactctag cttcccggca acaattaata gactggatgg aggcggataa 780 50 agttgcagga ccacttctgc gctcggccct tccggctggc tggtttattg ctgataaatc 840 51 tggagccggt gagcgtgggt ctcgcggtat cattgcagca ctggggccag atggtaagcc 900 52 ctcccgtatc gtagttatct acacgacggg gagtcaggca actatggatg aacgaaatag 960 53 acagateget gagataggtg ceteactgat taageattgg taactgteag aceaagttta 1020 54 ctcatatata ctttagattg atttaccccg gttgataatc agaaaagccc caaaaacagg 1080 55 aagattgtat aagcaaatat ttaaattgta aacgttaata ttttgttaaa attcgcgtta 1140 56 aatttttgtt aaatcagete attttttaac caataggeeg aaateggeaa aateeettat 1200 57 aaatcaaaag aatagcccga gatagggttg agtgttgttc cagtttggaa caagagtcca 1260 58 ctattaaaga acgtggactc caacgtcaaa gggcgaaaaa ccgtctatca gggcgatggc 1320 59 ccactacgtg aaccatcacc caaatcaagt tttttggggt cgaggtgccg taaagcacta 1380 60 aatcggaacc ctaaagggag cccccgattt agagcttgac ggggaaagcg aacgtggcga 1440 61 gaaaggaagg gaagaaagcg aaaggagcgg gcgctagggc gctggcaagt gtagcggtca 1500

PATENT APPLICATION: US/09/816,790

DATE: 10/09/2001 TIME: 14:33:28

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\I816790.raw

62 cyctycgcyt aaccaccaca cccyccycyc ttaatycycc yctacagyyc ycytaaaagy 1560 63 atctaggtga agatcctttt tgataatctc atgaccaaaa tcccttaacg tgagttttcg 1620 64 ttccactgag cgtcagaccc cgtagaaaag atcaaaggat cttcttgaga tccttttttt 1680 65 ctgcgcgtaa tctgctgctt gcaaacaaaa aaaccaccgc taccagcggt ggtttgtttg 1740 66 ccggatcaag agctaccaac tcttttccg aaggtaactg gcttcagcag agcgcagata 1800 67 ccaaatactg ttcttctagt gtagccgtag ttaggccacc acttcaagaa ctctgtagca 1860 68 ccgcctacat acctcgctct gctaatcctg ttaccagtgg ctgctgccag tggcgataag 1920 69 tcgtgtctta ccgggttgga ctcaagacga tagttaccgg ataaggcgca gcggtcgggc 1980 70 tgaacggggg gttcgtgcac acagcccagc ttggagcgaa cgacctacac cgaactgaga 2040 71 tacctacage gtgagetatg agaaagegee aegetteeeg aagggagaaa ggeggacagg 2100 72 tatccqqtaa qcqqcaqqqt cgqaacagga gagcgcacga gggagcttcc agggggaaac 2160 73 gcctggtatc tttatagtcc tgtcgggttt cgccacctct gacttgagcg tcgatttttg 2220 74 tgatgctcgt caggggggcg gagcctatgg aaaaacgcca gcaacgcggc ctttttacgg 2280 75 ttcctggcct tttgctggcc ttttgctcac atgtaatgtg agttagctca ctcattaggc 2340 76 accccagget ttacacttta tgetteegge tegtatgttg tgtggaattg tgageggata 2400 77 acaatttcac acaggaaaca gctatgacca tgattacgcc aagctacgta atacgactca 2460 78 ctaggcggcc gcgtttaaac aatgtgctcc tctttggctt gcttccgcgg gccaagccag 2520 79 acaagaacca gttgacgtca agcttcccgg gacgcgtgct agcggcgcgc cgaattcctg 2580 80 caggattega gggcccctgc aggtcaattc taccgggtag gggaggcgct tttcccaagg 2640 81 caqtctqqaq catqcqcttt agcagccccg ctggcacttg gcgctacaca agtggcctct 2700 82 ggcctcgcac acattccaca tccaccggta gcgccaaccg gctccgttct ttggtggccc 2760 83 cttcgcgcca ccttctactc ctcccctagt caggaagttc ccccccgccc cgcagctcgc 2820 84 gtcgtgcagg acgtgacaaa tggaagtagc acgtctcact agtctcgtgc agatggacag 2880 85 caccgctgag caatggaagc gggtaggcct ttggggcagc ggccaatagc agctttgctc 2940 86 cttcgctttc tgggctcaga ggctgggaag gggtgggtcc gggggcgggc tcaggggcgg 3000 87 gctcaggggc ggggcggcg cgaaggtcct cccgaggccc ggcattctcg cacgcttcaa 3060 88 aagcgcacgt ctgccgcgct gttctcctct tcctcatctc cgggcctttc gacctgcagc 3120 89 caatatggga tcggccattg aacaagatgg attgcacgca ggttctccgg ccgcttgggt 3180 90 ggagaggeta tteggetatg actgggeaca acagacaate ggetgetetg atgeegeegt 3240 91 gttccggctg tcagcgcagg ggcgcccggt tctttttgtc aagaccgacc tgtccggtgc 3300 92 cctgaatgaa ctgcaggacg aggcagcgcg gctatcgtgg ctggccacga cgggcgttcc 3360 93 ttgcgcagct gtgctcgacg ttgtcactga agcgggaagg gactggctgc tattgggcga 3420 94 agtgccgggg caggatetee tgtcatetea cettgeteet gccgagaaag tatecateat 3480 95 ggctgatgca atgcggcggc tgcatacgct tgatccggct acctgcccat tcgaccacca 3540 96 agcgaaacat cgcatcgagc gagcacgtac tcggatggaa gccggtcttg tcgatcagga 3600 97 tgatctggac gaagagcatc aggggctcgc gccagccgaa ctgttcgcca ggctcaaggc 3660 98 gcgcatgccc gacggcgatg atctcgtcgt gacccatggc gatgcctgct tgccgaatat 3720 99 catggtggaa aatggccqct tttctggatt catcgactgt ggccggctgg gtgtggcgga 3780 100 ccgctatcag gacatagcgt tggctacccg tgatattgct gaagagcttg gcggcgaatg 3840 101 ggctgaccgc ttcctcgtgc tttacggtat cgccgctccc gattcgcagc gcatcgcctt 3900 102 ctatcgcctt cttgacgagt tcttctgagg ggatcgatcc gtcctgtaag tctgcagaaa 3960 103 ttgatgatct attaaacaat aaagatgtcc actaaaatgg aagtttttcc tgtcatactt 4020 104 tgttaagaag ggtgagaaca gagtacctac attttgaatg gaaggattgg agctacgggg 4080 105 gtgggggtgg ggtgggatta gataaatgcc tgctctttac tgaaggctct ttactattgc 4140 106 tttatgataa tgtttcatag ttggatatca taatttaaac aagcaaaacc aaattaaggg 4200 107 ccagctcatt cctcccactc atgatctata gatctataga tctctcgtgg gatcattgtt 4260 108 tttctcttga ttcccacttt gtggttctaa gtactgtggt ttccaaatgt gtcagtttca 4320 109 tagcctgaag aacgagatca gcagcctctg ttccacatac acttcattct cagtattgtt 4380 110 ttgccaagtt ctaattccat cagaagctga ctctagatct ggatccggcc agctaggccg 4440 RAW SEQUENCE LISTING DATE: 10/09/2001 PATENT APPLICATION: US/09/816,790 TIME: 14:33:28

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\I816790.raw

							tcgacgacac	
	112	aggacacgca	aattaattaa	ggccggcccg	taccctctag	tcaaggcctt	aagtgagtcg	4560
	113	tattacggac	tggccgtcgt	tttacaacgt	cgtgactggg	aaaaccctgg	cgttacccaa	4620
	114	cttaatcgcc	ttgcagcaca	tccccctttc	gccagctggc	gtaatagcga	agaggcccgc	4680
	115	accgatcgcc	cttcccaaca	gttgcgcagc	ctgaatggcg	aatggcgctt	cgcttggtaa	4740
	116	taaagcccgc	ttcggcgggc	ttttttt				4768
	118	<210> SEQ 1	ID NO: 2					
	119	<211> LENGT	гн: 6355					
	120	<212> TYPE:	DNA					
	121	<213> ORGAN	NISM: Artifi	nce				
	123	<220> FEATU	JRE:					
	124 <223> OTHER INFORMATION: Phage vector 126 <400> SEQUENCE: 2							
	127	gtttaatagt	aatcaattac	ggggtcatta	gttcatagcc	catatatgga	gttccgcgtt	60
	128	acataactta	cggtaaatgg	cccgcctggc	tgaccgccca	acgacccccg	cccattgacg	120
	129	tcaataatga	cgtatgttcc	catagtaacg	ccaataggga	ctttccaatg	acgtcaatgg	180
							tatgccaagt	
	131	acgcccccta	ttgacgtcaa	tgacggaaaa	tggcccgcct	ggcattaagc	ccagtacatg	300
	132	accttatggg	actttcctac	ttggcagtac	atctacgtat	tagtcatcgc	tattaccatg	360
	133	gtgatgcggt	tttggcagta	catcaatggg	cgtggatagc	ggtttgactc	acggggattt	420
	134	ccaagtctcc	accccattga	cgtcaatggg	agtttgtttt	ggcaccaaaa	tcaacgggac	480
							gcgtgtacgg	
	136	tgggaggtct	atataagcag	agctggttta	gtgaaccgtc	agatccgcta	gcgctaccgg	600
	137	tcgccaccat	ggtgagcaag	ggcgaggagc	tgttcaccgg	ggtggtgccc	atcctggtcg	660
	138	agctggacgg	cgacgtaaac	ggccacaagt	tcagcgtgtc	cggcgagggc	gagggcgatg	720
							cccgtgccct	
							taccccgacc	
	141	acatgaagca	gcacgacttc	ttcaagtccg	ccatgcccga	aggctacgtc	caggagcgca	900
	142	ccatcttctt	caaggacgac	ggcaactaca	agacccgcgc	cgaggtgaag	ttcgagggcg	960
	143	acaccctggt	gaaccgcatc	gagctgaagg	gcatcgactt	caaggaggac	ggcaacatcc	1020
							gccgacaagc	
							ggcagcgtgc	
	146	agctcgccga	ccactaccag	cagaacaccc	ccatcggcga	cggccccgtg	ctgctgcccg	1200
	147	acaaccacta	cctgaggacc	cagtccgccc	tgagcaaaga	ccccaacgag	aagcgcgatc	1260
	148	acatggtcct	gctggagttc	gtgaccgccg	ccgggatcac	tctcggcatg	gacgagctgt	1320
							cataccacat	
	150	ttgtagaggt	tttacttgct	ttaaaaaacc	tcccacacct	ccccctgaac	ctgaaacata	1440
							tacaaataaa	
							agttgtggtt	
							ttcggggaaa	
							atccgctcat	
							tgagtattca	
							tttttgctca	
	157	cccagaaacg	ctggtgaaag	taaaagatgc	tgaagatcag	ttgggtgcac	gagtgggtta	1860
							aagaacgttc	
							gtgttgacgc	
							ttgagtactc	
	161	accagtcaca	gaaaagcatc	ttacggatgg	catgacagta	agagaattat	gcagtgctgc	2100
	162	cataaccatg	agtgataaca	ctgcggccaa	cttacttctg	acaacgatcg	gaggaccgaa	2160

PATENT APPLICATION: US/09/816,790

DATE: 10/09/2001 TIME: 14:33:28

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\I816790.raw

163	ggagctaacc	gcttttttgc	acaacatggg	ggatcatgta	actcgccttg	atcgttggga	2220
164	accggagctg	aatgaagcca	taccaaacga	cgagcgtgac	accacgatgc	ctgtagcaat	2280
165	ggcaacaacg	ttgcgcaaac	tattaactgg	cgaactactt	actctagctt	cccggcaaca	2340
166	attaatagac	tggatggagg	cggataaagt	tgcaggacca	cttctgcgct	cggcccttcc	2400
167	ggctggctgg	tttattgctg	ataaatctgg	agccggtgag	cgtgggtctc	gcggtatcat	2460
				ccgtatcgta			
169	tcaggcaact	atggatgaac	gaaatagaca	gatcgctgag	ataggtgcct	cactgattaa	2580
170	gcattggtaa	ctgtcagacc	aagtttactc	atatatactt	tagattgatt	taccccggtt	2640
171	gataatcaga	aaagccccaa	aaacaggaag	attgtataag	caaatattta	aattgtaaac	2700
172	gttaataatt	tgttaaaatt	cgcgttaaat	ttttgttaaa	tcagctcatt	ttttaaccaa	2760
				tcaaaagaat			
174	gttgttccag	tttggaacaa	gagtccacta	ttaaagaacg	tggactccaa	cgtcaaaggg	2880
				ctacgtgaac			
				cggaacccta			
177	gcttgacggg	gaaagcgaac	gtggcgagaa	aggaagggaa	gaaagcgaaa	ggagcgggcg	3060
				tgcgcgtaac			
				taggtgaaga			
				cactgagcgt			
				cgcgtaatct			
				gatcaagagc			
				aatactgttc			
				cctacatacc			
				tgtcttaccg			
				acggggggtt			
				ctacagcgtg			
				ccggtaagcg			
189	cqcacqaqqq	agcttccagg	gggaaacgcc	tggtatcttt	atagtcctgt	cgggtttcgc	3780
				tgctcgtcag			
191	aacgccagca	acgcggcctt	tttacggttc	ctggcctttt	gctggccttt	tgctcacatg	3900
192	taatgtgagt	tagctcactc	attaggcacc	ccaggcttta	cactttatgc	ttccggctcc	3960
193	tatgttgtgt	ggaattgtga	gcggataaca	atttcacaca	ggaaacagct	atgaccatga	4020
				ggcggccgcg			
195	ttggcttgct	teegegggee	aagccagaca	agaaccagtt	gacgtcaagc	ttcccgggac	4140
196	gcgtgctagc	ggcgcgccga	attcctgcag	gattcgaggg	cccctgcagg	tcaattctac	4200
197	cgggtagggg	aggcgctttt	cccaaggcag	tctggagcat	gcgctttagc	agccccgctg	4260
198	gcacttggcg	ctacacaagt	ggcctctggc	ctcgcacaca	ttccacatcc	accggtagcg	4320
199	ccaaccggct	ccgttctttg	gtggcccctt	cgcgccacct	tctactcctc	ccctagtcag	4380
				gtgcaggacg			
201	tctcactagt	ctcgtgcaga	tggacagcac	cgctgagcaa	tggaagcggg	taggcctttg	4500
202	gggcagcggc	caatagcagc	tttgctcctt	cgctttctgg	gctcagaggc	tgggaagggg	4560
				caggggcggg			
204	gaggcccggc	attctcgcac	gcttcaaaag	cgcacgtctg	ccgcgctgtt	ctcctcttcc	4680
				tatgggatcg			
				gaggctattc			
207	gacaatcggc	tgctctgatg	ccgccgtgtt	ccggctgtca	gcgcaggggc	gcccggttct	4860
208	ttttgtcaag	accgacctgt	ccggtgccct	gaatgaactg	caggacgagg	cagcgcggct	4920
209	atcgtggctg	gccacgacgg	gcgttccttg	cgcagctgtg	ctcgacgttg	tcactgaagc	4980
210	gggaagggac	tggctgctat	tgggcgaagt	gccggggcag	gatctcctgt	catctcacct	5040
211	tgctcctgcc	gagaaagtat	ccatcatggc	tgatgcaatg	cggcggctgc	atacgcttga	5100

PATENT APPLICATION: US/09/816,790

DATE: 10/09/2001 TIME: 14:33:29

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\1816790.raw

212	tccggctacc t	gcccattcg	accaccaagc	gaaacatcgc	atcgagcgag	cacgtactcg	5160	
213	gatggaagcc g	gtcttgtcg	atcaggatga	tctggacgaa	gagcatcagg	ggctcgcgcc	5220	
214	agccgaactg t	tcgccaggc	tcaaggcgcg	catgcccgac	ggcgatgatc	tcgtcgtgac	5280	
215	ccatggcgat g	scctgcttgc	cgaatatcat	ggtggaaaat	ggccgctttt	ctggattcat	5340	
216	cgactgtggc c	ggctgggtg	tggcggaccg	ctatcaggac	atagcgttgg	ctacccgtga	5400	
217	tattgctgaa g	gagettggeg	gcgaatgggc	tgaccgcttc	ctcgtgcttt	acggtatcgc	5460	
218	cgctcccgat t	cgcagcgca	tcgccttcta	tcgccttctt	gacgagttct	tctgagggga	5520	
219	tcgatccgtc c	tgtaagtct	gcagaaattg	atgatctatt	aaacaataaa	gatgtccact	5580	
220	aaaatggaag t	ttttcctgt	catactttgt	taagaagggt	gagaacagag	tacctacatt	5640	
221	ttgaatggaa g	gattggagc	tacgggggtg	ggggtggggt	gggattagat	aaatgcctgc	5700	
222	tctttactga a	ggctctta	ctattgcttt	atgataatgt	ttcatagttg	gatatcataa	5760	
223	tttaaacaag c	aaaaccaaa	ttaagggcca	gctcattcct	cccactcatg	atctatagat	5820	
224	ctatagatct c	tcgtgggat	cattgttttt	ctcttgattc	ccactttgtg	gttctaagta	5880	
225	ctgtggtttc c	aaatgtgtc	agtttcatag	cctgaagaac	gagatcagca	gcctctgttc	5940	
226	cacatacact t	cattctcag	tattgttttg	ccaagttcta	attccatcag	aagctgactc	6000	
227	tagatctgga t	.ccggccagc	taggccgtcg	acctcgagtg	atcaggtacc	aaggtcctcg	6060	
228	ctctgtgtcc g	ttgagctcg	acgacacagg	acacgcaaat	taattaaggc	cggcccgtac	6120	
229	cctctagtca a	ggccttaag	tgagtcgtat	tacggactgg	ccgtcgtttt	acaacgtcgt	6180	
230	gactgggaaa a	ccctggcgt	tacccaactt	aatcgccttg	cagcacatcc	ccctttcqcc	6240	
231	agctggcgta a	tagcgaaga	ggcccgcacc	gatcgccctt	cccaacagtt	gcgcagcctg	6300	
232	aatggcgaat g	gcgcttcgc	ttggtaataa	agcccgcttc	ggcgggcttt	ttttt	6355	
234	<210> SEQ ID	NO: 3		•				
235	<211> LENGTH	: 26						
	<212> TYPE: 3							
	<213> ORGANI		cial Sequen	ice				
	<220> FEATUR							
	0 <223> OTHER INFORMATION: Phage vector							
242	<400> SEQUEN	CE: 3						
	3 tgtgctcctc tttggcttgc ttccaa						26	
	<210> SEQ ID							
246	6 <211> LENGTH: 26							
	7 <212> TYPE: DNA							
	8 <213> ORGANISM: Artificial Sequence							
	0 <220> FEATURE:							
	1 <223> OTHER INFORMATION: Phage vector							
	3 <400> SEQUENCE: 4							
254							26	
256	6 <210> SEQ ID NO: 5							
257	7 <211> LENGTH: 25							
258	8 <212> TYPE: DNA							
259	9 <213> ORGANISM: Artificial Sequence							
	1 <220> FEATURE:							
	2 <223> OTHER INFORMATION: Phage vector							
264	<400> SEQUENCE: 5							
265	ctggttcttg tctggcttgg cccaa 25						25	
267	7 <210> SEQ ID NO: 6							
	8 <211> LENGTH: 25							
	69 <212> TYPE: DNA							
270	<213> ORGANIS	SM: Artifi	cial Sequen	ce				

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/816,790

DATE: 10/09/2001

TIME: 14:33:30

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\10092001\I816790.raw